January, 1980

APPROVAL CONDITIONS

BOKUM RESOURCES CORPORATION DISCHARGE PLAN DP-100

1. The discharger shall perform a subsurface hydrological investigation to delineate the source (i.e., deep ground water circulation or playa bottom recharge), quality, and extent of saturation noted in the vicinity of La Laguna (RE: SAI test holes NP-7, NP-34, NP-36, NP-52). Maps denoting the depth to water and thickness of saturation shall be developed during this investigation. Details of this investigation shall be approved by the EID prior to their implementation. Results and interpretation of the study shall be submitted to EID for use in the evaluation of the selection of an appropriate site for the second trench. If the results of this hydrological investigation show that favorable conditions for tailings disposal exist in the La Laguna area, then the trench to be used second shall be that delineated as number 3 in the discharge plan, unless some other evidence indicates to the contrary.

2. Detailed plans of ponds, trenches, and related facilities shall be submitted to the Division in ample time to allow for Division review, and operator response prior to any construction. Plans for the second trench and for the first two ponds shall be submitted at least sixty (60) days prior to construction. Plans for subsequent ponds and trenches shall be submitted at least six (6) months prior to construction.

3. All exploration holes within the "exclusion area" as delineated on Bokum Resources Corporation drawing submitted November 27, 1979, and entitled "Mill, Haul Road and Tailings Area, Exclusion Area from Juan Tafoya Grant", except for the ore haulage road, shall be located and field checked for proper plugging to the land surface. Notation shall be made of whether each hole is cased or uncased, and the material used to plug the hole. The discharger shall report to EID the results of the field check. Any necessary corrective measures shall be taken before any discharge of tailings.

4. The discharger shall consider wind-induced wave action in design of the evaporation ponds and shall provide adequate freeboard and energy dissipation as appropriate. Compliance with this condition shall be evidenced in each submittal applying for pond approval.

5. The discharger shall notify the EID in writing within a week when a trench excavation is complete. Subsequent to excavation of any trench and prior to any tailings being discharged thereto, there shall be an EID inspection of the trench for fractures, unplugged drill holes, limestone lenses or any other features which could provide avenues of excursion from the trench. If such features are found, effective corrective action and/or additional monitoring as approved by EID shall be accomplished by the discharger before any discharge of tailings to the trench.

6. Reports shall be submitted to the EID, monthly during the first year of operations and quarterly thereafter, detailing the following information:

   A. Daily volume and monthly total volume of solid tailings and of liquid tailings discharged to each trench,

   B. Daily volume and monthly total volume of liquids pumped into evaporation ponds,

   C. Daily volume and monthly total volume of fluids pumped from the ground water sump station into the Cañon de Marquez and into the evaporation ponds,

   D. Daily laboratory analyses of all fluids pumped from the ground water sump station,

   E. For the first six months of operations, complete monthly analysis of tailings decant solutions,

   F. Report of status of trenches and evaporation ponds to include monthly determinations of:

      1. Volume of solids in trenches at the end of the month,

      2. Liquid levels and volume of liquid in storage in each pond at the end of the month,

      3. Evaporation area of ponds and trenches at the end of the month,

      4. Evaporation and precipitation rates during the month,

      5. Drainage area contributing runoff to each pond and trench at the end of each month.

   G. Any pond liner compaction and moisture determinations made during the month.

7. Only water meeting ground water standards (Section 3-103 of the New Mexico Water Quality Control Commission Regulations) is to be discharged downstream from the ground water sump station, unless the discharger submits and EID approves a discharge plan amendment demonstrating that such discharge will not degrade downstream ground water beyond standards. The discharge from the sump shall not cause applicable New Mexico stream standards to be violated.

8. The following requirements must be met in the design and operation of the trenches:

   A. Trench 1 must be carefully monitored and its safety of operation must be demonstrated before subsequent, more susceptible sites are used. Examples of evidence to be used by EID in evaluating trench operation include:

      1. Observed side-slope stability of trench walls,

      2. Data collected from seepage collection wells,

      3. Occurrences of slurry line failures and spills,

      4. Other problems encountered during the filling of trench 1, such as drainage, decantation and gas generation problems.

   B. All trenches shall be dewatered to achieve a minimum of ten vertical feet between the top of the tailings and the free liquid level in the tailings within one year of the completion of filling the trench with tailings. No part of a trench may be covered with overburden until the liquid level in that part of the trench is at least ten feet below the top of the tailings, and until after EID inspection and approval. The determination of free liquid level shall be by direct measurements. Prior to trench closure, the total volume of liquids in the trench shall be calculated by the discharger by multiplying the total volume of saturated tailings in the trench, as determined by direct measurement, by the porosity of the tailings, and the results reported to EID.

   C. Reclamation, including covering, grading, surface preparation and revegetation, shall be initiated by the discharger for Trench 1 as soon as dewatering requirements of paragraph B have been met.

   D. An evaporation pond shall not be placed on the initial trench during at least the first five years of operation of the facility, and during such longer time as may be necessary to adequately assess the success of the reclamation.

9. If it appears that drainage and decantation cannot be accomplished in an efficient and timely manner as specified in Condition 8. B. using the proposed gravity system in Trench 1, then a full engineering evaluation of methods to enhance drainage and decantation shall be conducted by the discharger. Appropriate methods shall be implemented after approval by EID.

10. Ground water monitoring capability shall be established by the discharger in the Tres Hermanos sandstone unit prior to any discharge into the La Laguna trench area. The sampling regime, location, and construction details of the sampling well(s) shall be approved by the Division prior to the drilling.

11. The discharger shall allow EID, its contractors, consultants and other authorized representatives, free access to the tailings disposal site to conduct analyses and independent studies which may involve the installation of monitoring wells and/or other monitoring, flow measurement, or test devices; to inspect trenches, ponds, slurry and decant lines, reclamation areas, and other areas and facilities relevant to the discharge plan; and to sample effluents.

12. The discharger shall continue reclamation, maintenance and monitoring activities for a minimum of five years after the cessation of operations and until the reclamation and revegetation of the area is complete and stable, the Rio Marquez is reestablished in a stable configuration, and the diversion channel is in a stable configuration, as confirmed by on-site inspection(s) by EID.

13. All trench and pond seepage detection wells shall be drilled to a depth of 10 feet below the contact of the weathered and the unweathered Mancos shale, or 10 feet below the bottom of a trench, whichever is greater. At least three additional seepage detection wells shall be placed approximately 10 feet from Trench 1 at specific locations to be approved by EID after excavation of the trenches.

14. The following arroyo head-cutting studies shall be performed by the discharger:

    A. High resolution vertical aerial photographs of scale 1" = 200 ' or 1 to 2400 shall be made of the entire exclusion area, except for the ore haulage road, and of all areas within the drainage net above the confluence of the Cañon de Marquez and the Cañon de Santa Rosa where erosion processes may impact on the tailings disposal area. Such photographs shall be made within three (3) months after approval of the discharge plan or prior to commencement of any further construction in the tailings disposal area, whichever occurs first, and thereafter once every year and immediately after every rainfall event larger than the 10-year, 24-hour storm. Area of coverage for each set of photographs shall be identical. Photographs shall be referenced to permanent visible markers on the ground and shall be taken at the same time of day with similar photographic equipment. Photographs shall be certified by the photographer and submitted to EID as soon as prints are available.

    B. The discharger shall complete a literature and historical photograph search to determine the historical record of arroyo development in this area, shall compile the information and shall submit it to EID within 12 months of discharge plan approval.

    C. The discharger shall within 18 months of discharge plan approval provide to EID a report and an analysis of the above information and photographs including the identification of critical arroyos. If from the photographs it can be detected that any arroyo is actively cutting back, effective corrective and preventative action must be taken or a trench site in the projected path of the arroyo will be found unacceptable.

15. The following information shall be compiled by consultants to the discharger whose qualifications are acceptable to EID, and submitted to EID within 9 months of approval of the discharge plan:

A. The detailed map of the existing natural slopes in the entire tailings area which the discharger committed to under Item 1, on page 12 of the letter dated December 5, 1979, from Raymond Waggoner, of Bokum, to A.A. Topp, of EID.

B. The Cañon de Marquez channel between the point of diversion and the Cañon Seco confluence will be surveyed to establish a baseline configuration to be used for future reclamation control. The proposed survey schedule will be submitted to the EID prior to execution. At a minimum, the survey will document the following geomorphic parameters: Channel alignment and gradient, meander pattern, channel width and depth, and channel roughness (to include form roughness, particle roughness, and vegetation). Photographic documentation will be included and the completed survey results will be provided to the EID.

C. The detailed soils map committed to under Item 3, page 12 of the above referenced letter, plus a detailed map of the surficial deposits for the whole tailings area, with attention given to which soils would be best to put on top of reclaimed areas for revegetation and for minimization of erosion.

16. The discharger shall, within 6 months of approval of the discharge plan, submit to EID for approval detailed proposals for the following studies, including names and qualifications of the persons to perform the studies. There shall be no discharge of tailings to the second trench until the study proposed has been approved by EID. The results of the studies and a revised reclamation plan based on these results addressing all aspects of reclamation, except final Cañon de Marquez channel stabilization shall be submitted to EID for approval within one year of the date of approval of the proposal.

A. A rainfall simulation test shall be set up on a number of test plots containing different soils from the Marquez tailings area that would be representative of surface conditions after reclamation. These plots shall include a representative variety of slopes and soil characteristics. Unless the company can demonstrate to EID that it is impossible to do so, tests shall be set up on-site and also be run on natural undisturbed soils. Tests shall be made under a variety of simulated rainfall conditions, and should be designed to measure:

1. Sediment yield.

2. Runoff; and

3. Degree of rill development.

Tests shall be run under both wet and dry initial conditions. A photographic record shall be kept of all tests, and submitted to EID in the final report of the studies.

B. The revised reclamation plan shall use the results of the above studies; shall address all reclamation aspects, except the final channel stabilization of the Cañon de Marquez; shall include consideration of the diversion channel and all areas within the drainage net above the confluence of the Cañon de Marquez and the Cañon de Santa Rosa where erosion processes may impact the tailings disposal area.

17. Within four (4) years of approval of the discharge plan, a detailed plan of reclamation for the Cañon de Marquez channel between the point of diversion and the Cañon Seco confluence shall be prepared by the discharger and submitted to the EID. In addition to the factors documented in the baseline survey (Condition #15.B. above), the plan shall consider the impact on channel stability of the added inflow of water and sediment from Arroyo Hondo, the unnamed arroyo to the north, and adjacent reclaimed land surfaces to the north and south of the Cañon de Marquez. The plan shall also consider the alignment of Cañon de Marquez and Arroyo Hondo at their respective points of diversion, and will provide rip rap protection where necessary to establish and hold that alignment. Prior to breaching the diversion and secondary catchment dams this part of the reclamation plan shall be reviewed and revised by the discharger if necessary, and specifications on the methods for developing the reestablished Cañon de Marquez channel will be submitted to the EID for approval.

18. To insure the integrity of the rip rap and unprotected slopes of the diversion system as well as diversion channel capacity, the diversion system shall be inspected by the discharger for scour and deposition following every channel flow exceeding two (2) feet in depth, or as a minimum, every five (5) years. Flow depth will be as measured in the straight trapezoidal section of the diversion channel below Cañon de Marquez with reference to a fixed depth indicator installed in the channel. Displacement of rip rap particles sufficient to expose the filter blanket will be repaired and accumulation of sediment in excess of two (2) feet will be removed. Erosion, rilling, or gullying, in excess of one (1) foot into the unprotected east face of the diversion channel below station 8+00 shall be repaired by the discharger. The discharger shall retain a registered professional engineer licensed in New Mexico, or other professional acceptable to EID, who shall submit a report to the EID following each inspection period.

19. The company shall make provision for physical access from a public road to the tailings site after the cessation of operations. Before discharge of any tailings, the discharger shall submit to EID a map of the tailings area which shows access routes from a public road to the tailings area which will be available to the EID pursuant to the land control document after reclamation is complete.

20. After reclamation of trench 1 and all subsequent trenches, the discharger shall carefully inspect the reclaimed surface(s) once per week for evidence of settling and cracking, and if such evidence is found, it shall be reported within one week to EID. The appropriate engineering procedures shall be followed to prevent and eliminate such settling and cracking, with the intent being to eliminate both the possibility that residual tailings fluids might move up in the cracks to the surface, and area runoff might enter trenches via cracks.

21. The discharger shall monitor Trench 1 after reclamation for generation of gases resulting from reaction of the acid fluid with the solid materials in the trench walls or in the tailings themselves. Provision shall be made for measurement of interstitial gas pressure in the tailings and in surrounding earth materials. This monitoring capability shall be in place prior to trench closure. If gas pressure problems are detected, either before or after reclamation, an engineering solution shall be provided to allow the gases to escape before they cause structural failure of the reclamation cover. Such monitoring capability may be required by EID for subsequent trenches.

22. The company shall not allow or participate in any mining, in the placement of mine shafts, haulage ways, access tunnels or exploration drifts underneath or within the exclusion area (except for the access road from the mine and the area of Marquez Mesa) at anytime without the express written approval of the Division. Requests of the company for such express written approval should be made in a timely manner and at least 60 days prior to the proposed action. Such requests should include information which demonstrates that the proposed activities will not in any way threaten the integrity of the tailings disposal system by either subsidence, fracturing, cracking or otherwise affect the ability of the disposal trenches to retain the tailings and tailings liquid.

23. The discharger shall record with the County Clerks of all counties in which affected land lies, the following documents concerning the "Land Control Document" and the company's commitments concerning that Document:

    1. The Land Control Document and Exhibit "A" thereto,

    2. The November 28, 1979, letter from William E. Biava to Thomas E. Baca, concerning the transfer of the company's rights under the Land Control Document to the appropriate governmental agency,

    3. The Survey Plat submitted on November 27, 1979, as a supplement to Exhibit "A" of the "Conveyance Document"/ "Land Control Document",

    4. The December 14, 1979, letter from William E. Biava to Bruce Garber, concerning the transfer of rights under the "Land Control Document" to a subsequent owner and operator of the mill and tailings site.

    Copies of the above documents bearing the stamps of the respective County Clerks shall be submitted to EID prior to any discharge of tailings.

24. All commitments made by Bokum Resources Corporation in letters to EID, dated November 27, November 28, December 5, December 14, December 17, and December 26, 1979, and attachments thereto, shall be considered to be part of the discharge plan.

25. The discharger shall develop standardized forms and prodecures for all operations which relate to compliance with the discharge plan, such as construction, monitoring, and operation and maintenance activities which require quality control or scheduled reporting. These shall include such items as laboratory analysis and pumping of the ground water sump station fluids, daily tailings status reports as detailed in condition #6 above, and critical construction practices (e.g., degree of compaction and moisture contents). Appropriate check off controls should be incorporated into the forms. These forms shall be presented to and approved by the EID prior to any discharge of tailings.

26. The discharger shall develop a systematic referenced tabulation (or chart) which schedules all construction, monitoring, operation and maintenance, research activities and reporting requirements committed to or required by the discharge plan and approval conditions. This schedule must be approved by EID prior to any discharge of tailings.